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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,192	02/26/2002	Uri Kinrot	064/02587	2448

26418 7590 06/19/2003

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EXAMINER	
LEE, PATRICK J	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/070,192	Applicant(s) KINROT ET AL.	
	Examiner Patrick J. Lee	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *26 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☒ Claim(s) *1-27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:

The term "position" does not seem to most accurately describe the intent of the invention; the term "area of illumination" seems to be in line with the intended invention.

In line 7 of page 12, "radiation reflected at" should read, "radiation reflected from".

In line 8 of page 12, the phrase "within a band of Doppler frequencies" seems to be a misplaced modifier as it currently refers to the illuminated position rather than one of the forms of radiation.

As a result, dependent claims 2-27 are also objected.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a. With respect to claim 1, the formation of "the power of Doppler shifted energy between radiation illuminating the position and radiation reflected from the position" is not described in the specification. For the purposes of examination, this shall be construed to be the Doppler shift between the radiation illuminating the position and the radiation reflected from the position. As a result, dependent claims 2-27 are also rejected.

b. With respect to claim 6, the specification discloses the grating (32) to form a "local oscillation" field. The grating (32) is taught to have a metallic or dielectric coating (33) filled with dielectric material (35), but it is not disclosed that a current source is applied to form an oscillator. As a result, dependent claims 10-11 are also rejected.

4. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps/elements, such omission amounting to a gap between the steps/elements. See MPEP § 2172.01. The omitted steps/elements are:

c. With respect to claims 1-3, the term "time of passage" does not distinguish through where or what the edge of the sheet passes in order to determine the duration.

d. With respect to claim 7, the phrase "illumination radiation is used" is vague as it is not certain how radiation can perform oscillating duties. As a result, dependent claims 8-9 are also rejected.

e. With respect to claim 23, it is not specified as to the distance being measured, for the starting point and ending point for measurement of the distance is not claimed.

As a result, independent claim 1 and dependent claims 2-27 are rejected.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadowaki et al 5,216,478.

With respect to claim 1, Kadowaki et al disclose a Doppler velocity meter, for use in an application dealing with the transportation of paper in a facsimile device. Kadowaki et al disclose a velocity meter (100) that determines the velocity of the paper (106). Velocity meter (100) produces a laser beam that reflects off of paper (106) and sends an output signal representative of a Doppler frequency to a velocity detection circuit (110). Such is used to control the speed of the belt (101) on which the paper travels. The velocity meter (100) comprises of a laser source (1), lenses (2, 8), a photodetector (9), and a plurality of diffraction gratings (10, 191, 192). The light is emitted by laser source (1) and travels through lenses (2) and reflects off of diffraction grating (10) and travels through diffraction gratings (191, 192) before it is incident on paper (7). The paper scatters light and reflects light back into lens (8) and to photodetector (9). Photodetector (9) is able to determine a Doppler frequency and to determine whether the frequency is above or below a predetermined frequency (see column 19, lines 28-37). Kadowaki et al do not explicitly disclose the calculation of a time of passage, but such is known and would have been obvious to one of ordinary skill as the device taught by Kadowaki et al is capable of determining the traveling velocity of the paper. In order to determine the velocity, Kadowaki et al disclose the equation $F = 2V/d$. F is the Doppler frequency determined by the photodetector (9), while d is a pitch of gratings, which is predetermined (see column 20, lines 40-48). From this, a velocity V is determined. It would have been obvious for one of ordinary skill to determine the time it takes for the sheet to pass through an area of illumination

by knowing the length of the illumination area in the traveling direction and dividing that by the velocity V.

With respect to claims 2-3, the determination of time based on the leading edge or trailing edge is known and a mere matter of obvious design choice as either one is capable of being determined from the calculation of the velocity to determine the time of passage.

With respect to claim 4, Kadowaki et al disclose the optical detection of motion using a laser beam.

With respect to claim 5, Kadowaki et al do not explicitly state that the threshold for detection of the onset and cessation of motion are different, but such is known and would have been a mere matter of obvious design choice in order to operate the device so that the device could accurately determine whether motion is present.

With respect to claims 6-7, due to 35 U.S.C. 112 issues described above, the local oscillator is assumed to be anything that causes the vibration of light waves. Kadowaki et al disclose a radial diffraction grating (10) located on a disk (12), which is mounted to a motor shaft (12a). The movement of the diffraction grating according to a motor can cause oscillations in the light emitted by source (1).

With respect to claims 8-9, the local oscillator includes light reflected back from diffraction grating (10).

With respect to claims 10-11, the radiation from grating (10) reflects off of moving sheet (7) and into sensor (9).

With respect to claims 12-14, beam (82) comprises an entrance side of the illuminated area, while beam (81) comprises an exit side of the illuminated area.

With respect to claims 15-16, to use the entrance side to determine the arrival of a leading edge and to use the exit side to determine the exit of a trailing edge is known and would have been obvious in order to properly determine the velocity and the time of passage of the sheet across the illumination area.

With respect to claims 17-20, the position being formed of an extent is known and would have been obvious as such would allow for the accurate detection of the motion of the sheet.

With respect to claim 21, detection of the presence of the sheet is known and would have been obvious in order aid in the determination of the edges of the sheet to accurately determine the passage time of the sheet.

With respect to claim 22, Kadowaki et al disclose a velocity detection circuit (110) to determine the velocity in order to control the motor (105).

With respect to claim 23, Kadowaki et al do not explicitly measuring the distance the sheet translates, but such would have been obvious to determine based on the velocity of the sheet.

With respect to claims 24-25, Kadowaki et al disclose the use of a laser beam, but it would have been obvious to use IR radiation as such would have been capable of optically determining the velocity and motion of the paper (106).

With respect to claims 26-27, Kadowaki et al do not explicitly disclose the device determining the time to an accuracy better than about 0.5 mm/V sec or 0.1 mm/V sec but such would have been obvious in order to improve the performance of the device.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ballard 4,470,696 and Ishida et al 5,229,830 disclose laser Doppler velocimeters.

Bartunek et al 5,504,345 disclose a dual beam sensor and edge detection system/method.

Acquaviva 5,859,440 disclose a edge detecting system.

Cheng et al 6,404,506 disclose a laser-based system for detection of objects.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (703) 305-3871. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9558 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Patrick J. Lee
Examiner
Art Unit 2878

PJL
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June 16, 2003

DAVID PORTA
SUPERVISORY PATENT EXAMINER
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